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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,315

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Christian F. Greig

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RATNERPRESTIA

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VALLEY FORGE, PA 19482

EXAMINER

EVANS, GEOFFREY S

ART UNIT

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3742

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/567,315	Applicant(s) GREIG, CHRISTIAN F.	
	Examiner Geoffrey S. Evans	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060207</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3,12, 13,14,15,17,21,22,,23-26,27,28,30,31,33,34,38,39,40 are rejected under 35 U.S.C. 102(b) as being anticipated by Pernicka et al. in U.S. Patent No. 5,502,292. Pernicka et al. discloses lap welding a first and second foils of approximately the same size that are made of steel (see column 5,lines 51-52) and forming a melt pool that extends from the top surface of the first foil to the bottom surface of the second foil (see figure 2) and scanning the laser beam relative to the workpiece (see column 4,lines 24-26). Regarding claim 3, the clamps 20 are considered to be a thermally conductive top plate since they are disclosed as acting as a heat sink (see column 4,lines 38-46). Regarding claims 12,13,39 and 40, Pernicka et al. discloses using a shield gas of nitrogen or helium (which is a known noble gas) (see column 5,lines 13-15).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4,6,7 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pernicka et al. in view of Sanjeu et al. in U.S. Patent No. 6,359,252. Sanjeu et al.

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teaches the equivalence of continuous wave laser welding and using a pulsed laser to laser weld workpieces together (see abstract and column 4, lines 34-61). It would have been obvious to adapt Pernicka et al. in view of Sanjeu et al. to use a continuous wave laser as a functionally equivalent method of laser welding the workpieces together.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pernicka et al. in view of Sanjeu et al. as applied to claim 4 above, and further in view of Haruta et al. in U.S. Patent No. 5,347,528 and Nied et al. in U.S. Patent No. 4,906,812. Haruta et al. teaches using an optical fiber with a pulse Nd:YAG laser for welding. Nied et al. teaches that an Nd:YAG laser with a continuous beam may be coupled to an optical fiber (see column 3, lines 39-45). It would have been obvious to adapt Pernicka et al. in view of Sanjeu et al. and Haruta et al. and Nied et al. to provide an optical fiber to send the laser beam to the workpiece so that a complicated mirror system is not required.

6. Claims 8, 15, 16 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pernicka et al. in view of Sanjeu et al. as applied to claims 6 and 14 above, and further in view of Chubarov et al. in U.S. Patent No. 4,317,981. Chubarov teaches controlling the velocity of the scanning in dependence upon a measured temperature of the workpiece. It would have been obvious to adapt Pernicka et al. in view of Sanjeu et al. and Chubarov et al. to provide this to vary the velocity of the laser beam in dependence upon the temperature so that the welding process is substantially consistent over the entire seam.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pernicka et al. in view of Sanjeu et al. as applied to claim 6 above, and further in view of Aoki et

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al. in Japan Patent No. 3-60,883. Aoki et al. teach lowering the speed of the scanning (slew rate) at the ends of the workpiece to prevent cracking. It would have been obvious to adapt Pernicka et al. in view of Sanjeu et al. and Aoki et al. to reduce the speed of the slew rate to prevent cracks at the edges of the workpiece.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pernicka et al. in view of Sanjeu et al. as applied to claim 4 above, and further in view of Nakamura in Japan Patent No. 9-85,477. Nakamura teaches monitoring the temperature of the workpiece during lap welding and controlling the laser power in dependence upon the temperature (e.g. see paragraph 15). It would have been obvious to adapt Pernicka et al. in view of Sanjeu et al. and Nakamura to provide this so that the welding process is consistent.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pernicka et al. in view of Sanjeu et al. as applied to claim 4 above, and further in view of Harada et al. in Japan Patent No. 59-144,587. Harada et al. teaches varying the laser power near the ends of the weld to increase weld strength. It would have been obvious to adapt Pernicka et al. in view of Sanjeu et al. and Harada et al. to provide this to increase weld strength.

10. Claims 18,19 and 32, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pernicka in view of Haruta et al. in U.S. Patent No. 5,347,528. Haruta et al. teaches using an optical fiber (element 21) to deliver the energy to a head. It would have been obvious to adapt Pernicka in view of Haruta et al. to provide this to avoid the use of a complex mirror system.

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11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pernicka in view of Kawamura et al. in U.S. Patent No. 7,018,260. Kawamura et al. teaches using semiconductor diodes with a wavelength of 808 nm for welding (See column 9, lines 35-40). It would have been obvious to adapt Pernicka in view of Kawamura et al. to provide this to take advantage of semiconductor diodes known high level of efficiency. Adjusting the power level of the lasers for a welding application is considered a matter of engineering choice in the absence of evidence of unexpected results.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey S. Evans whose telephone number is (571)-272-1174. The examiner can normally be reached on Mon-Fri 7:30AM to 4:00 PM (flexible).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Geoffrey S Evans/
Primary Examiner, Art Unit 3742